CM We CLAIMS

1. Heparin fragments, characterized by 14-18 sugar units, the disaccharide unit L-iduronosyl-2-O-sulphate-N-sulpho-D-glucosamine-6-O-sulphate being the main component, and where unsulphated L-iduronic acid is in a position situated 3-5 sugar units from the unreducing terminal and is followed by a unit selected from the group consisting of N-sulpho-D-glucosamine sulphate and N-acetyl-glucosamine in sulphated and unsulphated form.

2. Heparin fragments, characterized by the structure $(U-G)_n-I-G-(U-G)_m$ where n is 1 or 2 and m is 5 or 6, I is unsulphated L-iduronic acid, U is L-iduronic acid-2-O-sulphate, and G is N-sulpho-D-glucosamine-6-O-sulphate.

3. Pharmaceutical compositions, characterized in that they comprise heparin fragments having selective anticoagulation activity and containing 14-18 sugar units, the disaccharide unit Liduronosyl-2-O-sulphate-N-sulpho-D-glucosamine-6-O-sulphate being the main component, and where unsulphated L-iduronic acid is in a position situated 3-5 sugar units from the unreducing terminal and is followed by a unit selected from the group consisting of N-sulpho-D-glucosamine sulphate and N-acetyl-glucosamine in sulphated and unsulphated form.

- 4. Pharmaceutical compositions, characterized in that they contain heparin fragments of the structure $(U-G)_n-I-G-(U-G)_m$ where n is 1 or 2 and m is 5 or 6, I is unsulphated L-iduronic acid, U is L-iduronic acid-2-O-sulphate and G is N-sulpho-D-glucosamine-6-O-sulphate.
- 5. A process for the preparation of heparin fragments according to claim 1, characterized by
- (a) treating heparit with nitrous acid in dimethoxy-

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ethane and purifying the material obtained, or

- (b) periodate-oxidizing heparin at low pH and temperature, respectively, or
- (c) partially depolymerizing heparin with heparinase, or
- (d) partially depolymerizing heparin by esterification of carboxyl groups and then subjecting the material obtained to alkaline 3-elimination, or
- (e) partially depolymerizing heparin from partial N-desulphatation and then deaminating the material obtained with nitrous acid.

add.